



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,630	12/14/2000	Hiroaki Ozeki	43890-468	5850

7590 06/28/2004

McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER

WARE, CICELY Q

ART UNIT	PAPER NUMBER
----------	--------------

2634

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,630

Applicant(s)

OZEKI ET AL.

Examiner

Cicely Ware

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-17 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted prior art (Fig. 13) in view of Kasuga et al. (US Patent 4,355,304).

(1) With regard to claim 1, applicant discloses a prior art digital signal receiver (Fig. 13) comprising: an input terminal (101) for receiving an input signal digitally-modulated; at least two variable gain amplifiers (102, 104) coupled in series to said input terminal for controlling the level of the input signal; an analog-to-digital converter (106) for receiving an output of said variable gain amplifier (104); a level comparator (112) coupled to an output of said A/D converter (106) for comparing a level of the output of said A/D converter and a reference level; a loop filter (113) coupled to said level comparator (112); and a control voltage generator (114) for generating control voltages for controlling said variable gain amplifiers based on an output of said loop filter. However Applicant's Admitted prior art does not disclose wherein an operation-starting point of any of said variable gain amplifiers is shifted using control voltages.

However Kasuga et al. discloses wherein an operation-starting point of any of said variable gain amplifiers is shifted using control voltages when a level fluctuation

response speed of any of said variable gain amplifiers is lower than a reference level (col. 4, lines 13-37, 51-68, col. 5, lines 1-42, col. 6 lines 6-27).

Therefore it would have been obvious to one of ordinary skill in the art to modify Applicant's Admitted prior art to incorporate wherein an operation-starting point of any of said variable gain amplifiers is shifted using control voltages when a level fluctuation response speed of any of said variable gain amplifiers is lower than a reference level in order to reduce signal capacity within the range which maintains the allowable transmission quality (Kasuga et al., col. 2, lines 7-9).

Allowable Subject Matter

3. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 4-17 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The instant application discloses a digital signal receiver comprising: an input terminal for receiving an input signal with digitally-modulated; at least two variable gain amplifiers coupled in series to said input terminal for controlling the level of the input signal; an analog-to-digital (A/D) converter for receiving an output of said variable gain amplifier; a level comparator coupled to an output of said A/D converter for comparing a level of the output of said A/D converter and a reference level; a loop filter coupled to said level comparator; and a control voltage generator for generating control voltages for

Art Unit: 2634

controlling said variable gain amplifiers based on an output of said loop filter. Prior art references show similar methods but fail to teach "the operation-starting point is shifted based on an average of the control voltage for said any of said variable gain amplifiers and a fluctuation frequency of the control voltage for said any of said variable gain amplifier", as in claim 4; "the operation-starting point is shifted based on an average of the control voltage for said any of said variable gain amplifier and a level fluctuation amplitude of the input signal", as in claim 5; "the operation-starting point is shifted based on the control voltage for said any of said variable gain amplifier and an electric power ratio of an adjacent channel and a desired channel", as in claim 6; "the bandwidth is controlled based on average values of the control voltages and fluctuation frequencies of the control voltages", as in claim 8; "wherein the bandwidth is controlled based on average values of the control voltages and a level fluctuation amplitude of the input signal", as in claim 9; "a ghost detector coupled to an output of said demodulator for detecting a delay time of ghost, comprising: a delay unit for delaying the output of said demodulator, a ghost calculator for calculating the delay time and an energy of ghost, a coefficient unit, and an averaging unit for calculating a coefficient of said coefficient unit, wherein a number of times of averaging at said averaging unit is controlled based on the delay time", as in claim 11; "a ghost detector connected to an output of said demodulator for calculating a delay time of ghost, wherein a bandwidth of said loop filter is controlled based on the delay time", as in claim 12; "a carrier-to-noise (CN) ratio detector coupled to the output of said A/D converter for detecting a carrier-to-noise (CN) ratio of an input signal into said A/D converter, wherein an operation-starting point of

Art Unit: 2634

said variable gain amplifier is shifted based on the CN ratio", as in claim 13; and a carrier-to-noise (CN) ratio detector coupled to the output of said A/D converter for detecting a carrier-to-noise (CN) ratio of an input signal into said A/D converter, wherein a bandwidth of said loop filter is controlled based on the CN ratio" as in claim 14 with the remaining limitations of the independent claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 703-305-8326. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers

Application/Control Number: 09/735,630
Art Unit: 2634

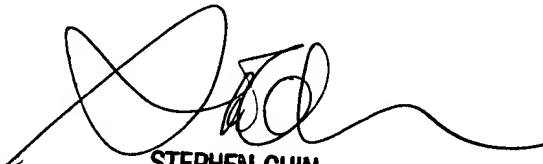
Page 6

for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
June 19, 2004



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Notice of References Cited	Application/Control No. 09/735,630	Applicant(s)/Patent Under Reexamination OZEKI ET AL.	
	Examiner Cicely Ware	Art Unit 2634	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-4,355,304	10-1982	Kasuga et al.	341/75
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.